



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,802	03/16/2001	Elwyn B. Davies	476-1993	6812
23644	7590	02/24/2005	EXAMINER	
BARNES & THORNBURG P.O. BOX 2786 CHICAGO, IL 60690-2786			DENNISON, JERRY B	
			ART UNIT	PAPER NUMBER
			2143	

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/810,802

Applicant(s)

DAVIES, ELWYN B.

Examiner

J. Bret Dennison

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6 and 8-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6 and 8-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Action is in response to Amendment for Application Number 09/810,802 received on 28 October 2004.
2. Claims 1, 4-6, and 8-20 are presented for examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-6, and 8-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilford et al. (U.S. Patent Number 6,111,877).

3. Regarding claims 1, 16, 18, and 20, Wilford discloses a method and apparatus of distributing traffic between a plurality of paths in a communications network comprising at least two nodes (Wilford, col. 2, lines 47-48), said paths each being between the same pair of nodes and each path having a hash function associated therewith (Wilford, col. 2, lines 49-51), and wherein said traffic comprises packets (Wilford, col. 2, line 49), each packet being a member of a flow and comprising a flow label and a hash function (Wilford, col. 2, lines 49-51), said method comprising distributing the packets between the paths on the basis of the flow labels and hash functions wherein substantially all

Art Unit: 2143

packets with the same flow label are distributed down the same path and wherein substantially all packets with the same hash function are distributed down the associated path (Wilford, col. 2, lines 46-55).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-6, 8-10, 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (U.S. Patent Number 6,408,001) in view of Wilford et al. (U.S. Patent Number 6,111,877).

4. Regarding claims 1, 16, 18, and 20, Chuah discloses a method of allocating traffic between a plurality of paths in a communications network comprising at least two nodes, said paths each being between the same pair of nodes (Chuah, col. 4, lines 40-55), and wherein said traffic comprises packets (Chuah, col. 4, lines 55-65), each packet being a member of a flow and comprising a flow label (Chuah, col. 5, lines 15-20), said method comprising allocating the packets between the paths on the basis of the flow labels (Chuah, col. 6, lines 25-40). Chuah does not explicitly state wherein each path has a hash function associated therewith and wherein substantially all packets with the same flow label are distributed down the same path and wherein

substantially all packets with the same hash function are distributed down the associated path. In an analogous art, Wilford discloses load sharing access flows wherein each packet is associated with a flow, and a hash value is determined for each flow, so as to distribute the sequence of packets into a set of hash buckets (Wilford, col. 2, lines 45-55). Therefore it would have been obvious to one in the ordinary skill in the art at the time of the invention to incorporate the load sharing across flows of Wilford into Chuah in order to provide a method and system in which packet traffic can relatively evenly divide among a plurality of possible paths, without requiring a relatively large amount of memory where processing can be done rapidly in hardware using a relatively small amount of circuitry (Wilford, col. 2, lines 34-45).

5. Regarding claim 4, Chuah and Wilford disclose the limitations, substantially as claimed, as described in claim 1, including wherein said flow labels are selected from a pre-specified range of values in a pseudo random manner (Wilford, Table 1-1).

6. Regarding claims 5 and 6, Chuah and Wilford disclose the limitations, substantially as claimed, as described in claim 1, including wherein said flow labels are selected such that the selected flow labels substantially fit a specified uniform distribution (Wilford, Table 1-1, col. 2, lines 34-40).

7. Regarding claim 8, Chuah and Wilford disclose the limitations, substantially as claimed, as described in claim 1, including applying the hash function to the flow labels

and distributing the packets between the paths on the basis of the results of the hash function (Wilford, col. 3, lines 50-67).

8. Regarding claim 9, Chuah and Wilford disclose the limitations, substantially as claimed, as described in claim 8, including specifying a range of hash result values for each of the paths (Wilford, col. 5, lines 25-35).

9. Regarding claim 10, Chuah and Wilford disclose the limitations, substantially as claimed, as described in claim 9, including wherein said ranges are specified on the basis of information about the total volume of traffic (Wilford, col. 4, lines 64-67).

10. Regarding claim 12, Chuah and Wilford disclose the limitations, substantially as claimed, as described in claim 1, including wherein said paths are physical paths (Chuah col. 4, lines 30-45).

11. Regarding claim 13, Chuah and Wilford disclose the limitations, substantially as claimed, as described in claim 1, including wherein said paths are logical paths (Chuah col. 4, lines 30-45).

12. Regarding claim 14, Chuah and Wilford disclose the limitations, substantially as claimed, as described in claim 1, including wherein said packets are internet protocol packets (Chuah, col. 4, lines 65-67).

13. Regarding claims 15 and 19, Chuah and Wilford disclose the limitations, substantially as claimed, as described in claims 1 and 18, including wherein the paths are associated with an interface between an electrical region and an optical region of the communications network (Chuah, col. 4, lines 17-30, Chuah teaches that the invention is applicable over and packet type transport).

14. Regarding claim 17, Chuah and Wilford disclose the limitations, substantially as claimed, as described in claim 16, including wherein the apparatus is a communications network node suitable for use within the core of a communications network (Chuah, col. 4, lines 30-45).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah et al. (U.S. Patent Number 6,408,001) in view of Wilford et al. (U.S. Patent Number 6,111,877) as applied to claims 1, 4-6, and 8-10, and further in view of Soirinsuo et al. (U.S. Patent Number 6,084,855).

15. Regarding claim 11, Chuah and Soirinsuo disclose the limitations, substantially as claimed, as described in claim 9, including wherein said ranges are specified on the basis of forecast information about the volume of particular flows (Soirinsuo, col. 9, lines 14-20).

Response to Amendment

16. Applicant's arguments and amendments filed on 28 October 2004 have been carefully considered but they are not deemed fully persuasive. Applicant's arguments are deemed moot in view of the following new grounds of rejection as explained here below, necessitated by Applicant's substantial amendment (i.e., *by including new limitations to the independent claims which will require further search and consideration*) to the claims which significantly affected the scope thereof.

17. Applicant's arguments with respect to claims 1, 4-6, and 8-20 have been fully considered but they are not persuasive. Applicant's arguments include the failure of previously applied art to expressly disclose the teachings using flow labels and the hash functions to distribute the packet to the available paths only [see Applicant's Response, page 5]. It is evident from the mappings found in the above rejection that Wilford discloses the teaching of dividing packet traffic load among a plurality of paths where each packet is associated with a flow, and a hash value is determined for each flow, so as to distribute the sequence of packets into a set of hash buckets. Further, it is clear from the numerous teachings (previously and currently cited) that the provision for using "dividing packet traffic into evenly distributed paths based from packet flow labels and hash functions" was widely implemented in the networking art.

18. Thus, Applicant's arguments drawn toward distinction of the claimed invention and the prior art teachings on this point are not considered persuasive. It is also clear

to the Examiner that Wilford clearly teaches the independent claims of the Applicant's claimed invention.

19. Applicant's arguments with respect to claims 1, 4-6, and 8-20 are deemed moot in view of the following new grounds of rejection, necessitated by Applicant's amendment to the claims, which significantly affected the scope thereof.

20. Furthermore, as it is Applicant's right to continue to claim as broadly as possible their invention, it is also the Examiner's right to continue to interpret the claim language as broadly as possible. It is the Examiner's position that the detailed functionality that allows for Applicant's invention to overcome the prior art used in the rejection, fails to differentiate in detail how these features are unique. As it is extremely well known in the networking art as already shown by Wilford as well as other prior arts of records disclosed dividing packet traffic into evenly distributed paths based from packet flow labels and hash functions is taught as well as other claimed features of Applicant's invention. By the rejection above, the applicant must submit amendments to the claims in order to distinguish over the prior art use in the rejection that discloses different features of Applicant's claimed invention.

21. It is the Examiner's position that Applicant has not yet submitted claims drawn to limitations, which define the operation and apparatus of Applicant's disclosed invention in manner, which distinguishes over the prior art.

22. Failure for Applicant to significantly narrow definition/scope of the claims and supply arguments commensurate in scope with the claims implies the Applicant intends broad interpretation be given to the claims. The Examiner has interpreted the claims

with scope parallel to the Applicant in the response and reiterates the need for the Applicant to more clearly and distinctly define the claimed invention.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Bret Dennison whose telephone number is (571)272-3910. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Wiley can be reached on (703)308-5221. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

Art Unit: 2143

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

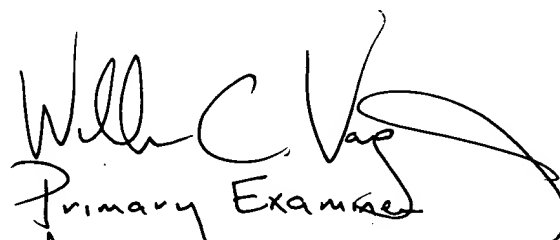
Business Center (EBC) at 866-217-9197 (toll-free).



J. B. D.

Patent Examiner

Art Unit 2143



Primary Examiner
Art Unit 2143
William C. Vaughn Jr.